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ABSTRACT

Between May 1967 and June 1970, the Houston Independent School District in consortium with 14 others contracted with USOE to coordinate the development of an organic curriculum. The project's purpose was to create a climate for change, while interpreting for Houston secondary schools the objectives of a plan that would be: relevant, based on behavioral and related sciences, individualized to student needs, locally planned and directed, economically feasible, and available to all school districts in the nation. Significant gains were made in creating a favorable climate for (1) change in instructional technology, and (2) in staff attitudes toward the development of a learner-responsive instructional system at the project school. Project enthusiasm is evidenced by the fact that the 14 original school districts (now 20) have incorporated, and are assuming a share of the continuation expense. (Author/LLP)

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COORDINATION OF ORGANIC CURRICULUM DEVELOPMENT IN THE PUBLIC SCHOOLS IN HOUSTON, TEXAS

Arthur L. Pace

Houston Independent School District

Houston, Texas

September, 1970

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GLOSSARY

Organic Curriculum

A curriculum that is more than merely a sum of its parts. Additionally, it allows each part to grow and, concurrently function, in relation to all other parts, as is true of any organic system.

ES'70

An acronym for "An Educational System for the Seventies (i.e. the seventh decade of the 20th Century -- 1970)

ES'70 Network

The selected school districts that were to function as validation sites for the new comprehensive secondary curriculum (an Organic Curriculum) and school organization. (See Appendix K)

PERT

Program Evaluation Review Technique--a set of principles, methods and techniques that establish a sound basis for effective scheduling, cost estimating, controlling and pre-planning in the management of programs. (See Appendix C)

SUMMARY

Individualized education that is based on needs and aspirations of high school students is, and has been, the ultimate goal of educators since the beginnings of public school education. Appropriate education, "the rose called by another name" is one of the goals of the '70's for the Houston Independent School District. Realization of this goal is thought by many to be next to impossible. With the increasing burden on the tax dollar for financing school programs caused by the racial conflict in eliminating the dual system of public education, and the ever increasing population of urban school districts, appropriate education does seem very difficult indeed to achieve. Conceivably, in an inflated economy, such an education will be tremendously expensive.

Perhaps an answer to the multifaceted problem lies in restructuring the traditional educational system and in utilizing techniques that have proven to be successful in business and industry, the systems approach.

On May 17, 1967, Drs. Robert Morgan and David Bushnell, then Directors of the Division of Comprehensive and Vocational Research, USOE, invited a group of school Superintendents to Ft. Lauderdale, Florida. Morgan and Bushnell presented the paper entitled "Designing an Organic Curriculum". This paper provided the rationale for the launching of an educational research and development program. This program would spawn a new comprehensive secondary school curriculum and organization. The program was labeled an Educational System for the Seventies (ES '70). The primary goal was the restructuring of secondary education to provide each student with an education highly relevant to his aspirations and to the adult roles which he would play, and which would be economically practical within available public resources.

The USOE would initially invest in two separate but directly related activities. First a small grant would be made to participating school districts (to be known later as the ES '70 Network) for the purpose of funding the office of a Program Coordinator. This person would create a climate for change in his local community, and in essence lay the groundwork for the new curriculum. He would overcome the "inertia of the status quo". The second investment would be a larger one. It would fund universities and research oriented organizations that would develop separate by related components of an Organic Curriculum. These components would be tested and validated in the fourteen school districts (now 20), the Network schools. Said components would be modified according to local requirements. Ultimately these validated components would be assembled into a comprehensive curriculum that would be viable to any school district in the

nation. Such an endeavor would be expensive to complete. It was proposed that the U.S. Office of Education in partnership with the state educational agencies and local educational agencies in consortium would finance the project.

The Coordination of the Development of an Organic Curriculum in the Public Schools of Houston, Texas was the legal title of the grant to the Houston Independent School District. The total three year grant amounted to $60,000. The Program Coordinator, operating under this grant, directed his efforts and energies at the four elements of the program that were to be completed before it would be operational: Staff Development, Instructional Management, School Management, and Evaluation.

Personnel, teachers and counselors, were sent to workshops sponsored by USOE in Duluth, Minnesota and Willingboro, New Jersey to receive instruction in writing behavioral objectives, incorporating behavioral objectives into learning modules, utilization of educational technology and managing learning activities. Parallel to this activity was that of interpreting the objectives of an Organic Curriculum to the community persons, parents, local business and industry. In addition, the Coordinator would serve as the linking agent between the Texas Education Agency and the ES '70 Network.

Significant accomplishments under this grant were in the area of Staff Development. Instructional personnel and administrative staff members, as a result of Network workshops, visitation to Network schools and in-service training, made significant gains in learning to write behavioral objectives. In addition, expertise was acquired in incorporating behavioral objectives in learning modules, with reference to proper scope and sequence. Further, teachers have learned to design learning activities appropriate for the attainment of stated behavioral objectives, while giving full attention to multimodal strategies that are compatible to varying learning styles of students. Finally, the technique of pre-test and post-test to determine the point of entry of individual students into an instructional sequence and to determine the level of performance attained by students, respectively, was acquired.

Perhaps more important than the above accomplishments in instructional technology was a definite observable change of attitude on the part of the staff of the Project School. Teachers see themselves not as dispensers of knowledge but as managers of instructional activities that are student-centered as opposed to teacher-centered. These teachers subscribe to the statement "the point is not what is the best way to teach a mathematical concept, but what is the best way to teach Johnny a mathematical concept".

In the area of Instructional Management and Career Guidance significant accomplishments are evidenced by the initiation of Flexible (Modular) Scheduling and the participation in a Field Test of a Comprehensive Guidance Program.

Short-lived support from the U.S. Office of Education has made it necessary to alter the timetable originally proposed for the development of the Organic Curriculum. Consequently, no objective evaluative data is available at this point in time.

On the basis of the success achieved in this project, it is recommended that (1) support for the development of an Organic Curriculum be continued, by USOE, to a point where local districts can take over. It is believed that a three-year extension with additional money for developing components or adaptation of components already developed would be ample, (2) contracts could be let to Network school districts for the validation of ES '70 related research, both completed projects and those in developmental stages. (e.g., Tuckman's SCOPE, Project ABLE, Cluster-Concept of Vocational Education, Foley's Management Information Project), (3) the local-state-federal partnership must be a reality if success is to be achieved.

INTRODUCTION

On May 11, 1967, the United States Office of Education, Bureau of Research, invited Superintendents of fifteen school districts to attend a conference in Ft. Lauderdale, Florida. This conference had as its main purpose the organization of a 'network' of secondary schools. The fifteen invitees that represented school districts of varying size, socioeconomic make-up, and national geographic location, would form the nucleus of the proposed network. The purpose of the network would be to initiate a massive research and development of a new educational curriculum in vocational education. The new curriculum, called an "Organic Curriculum" was described in a paper written by Doctors R. M. Morgan and D. S. Bushnell. This paper was sent to the fifteen school Superintendents prior to the conference.

The typical secondary school district provides for its students three types of curricula: College Preparatory, Vocational, and General. It is common knowledge that the Vocational and General curricula fall short of providing educational experiences that sufficiently equip the graduate to successfully fulfill his economic needs. Further, these two curricula, in most instances, are irrelevant to the world in which the graduate lives. Clearly, then, there is a great degree of urgency in the creation of a new comprehensive secondary school system that will simultaneously prepare students for higher education and enable them to leave the formal education structure at various points and enter adult life with marketable skills.

The plan of the Office of Education (Morgan and Bushnell) called for the establishment of a series of experimental school curricula in the fifteen school districts. In each of these districts there would be developed a new curriculum which would be relevant to the needs of the students and the community. Such a curriculum would be tested for effectiveness in actual practice. Centralized leadership for the pilot school participants would be provided by USOE, even though each (pilot school) would adapt the new curricula to local requirements. Ultimately, the significant findings of the fifteen curricula experiments would be assembled without loss of identity. The results, conceivably, would be viable, adaptable, comprehensive secondary school curricula available to any school district in the nation.

The following points were discussed and agreed upon:

Purpose of the Program - Development of a comprehensive high school curriculum and organization which is designed to:

1. provide individualized education for each student that is relevant to the adult roles which they must play.

2. be economically feasible within available public resources.

3. be based on behavioral and related sciences.

4. employ suitable systems of school organization.

5. utilize appropriate educational technology.

6. be locally planned and directed.

7. be Federally financed and coordinated.

8. be available, ultimately, to all school systems.

Organization of the Network

The fifteen school districts represented would form the core of a network of school districts to develop the organic curriculum. Specifically, the network was to be thought of as a pyramid with the Office of Education representing the apex and the local districts would form the base. The school districts (LEA Local Education Agency) would be responsible for making the experiment a success. There would be a direct line of communication between the Office of Education (OE) and the LEA. OE was to be a service agency and would provide the following:

1. Leadership
2. Description of the program
3. Selection of participants
4. Coordination of activities
5. Funding
6. Orientation and training
7. Timetable for program completion
8. Preparation of materials

The LEA would be an Administrative Agency with four main functions (1) to plan, (2) to organize, (3) to direct and (4) to report. The LEA would be responsible for disseminating information to the local Board of Education, administrative and instructional staff, and the State Department of Education. The LEA would organize its staff for the development and implementation of the activity. A plan of action must be compatible to environmental conditions and the climate in which the program will operate. This would be an LEA responsibility. Finally the LEA would select a Program Coordinator. Since the overall objective of an Organic Curriculum was to redefine educational goals and overhaul

the educational process; the objectives for each full-time Program Coordinator would include:

(1) "Delimit general purposes of the organic curriculum to the local school districts. Modification of general purposes to fit the local district will be necessary since each district and each teacher and each administrator will be different. These general purposes are as follows:

(a) Integrate academic and vocational learning by appropriately employing vocational preparation as one of the principal vehicles for the inculcation of basic learning skills. In this way learning could be made more palatable to many students who otherwise have difficulty seeing the value of a general education.

(b) Expose the student to an understanding of the "real world" through a series of experiences which capitalize on the desire of youth to investigate for himself.

(c) Train the student in a core of generalizable skills related to a cluster of occupations rather than just those related to one specialized occupation.

(d) Orient students to the attitudes and habits which go with successful job performance and successful living.

(e) Provide a background for the prospective worker by helping him to understand how he fits within the economic and civic institutions of our country.

(f) Make students aware that learning is life-oriented and need not, indeed must not, stop with his exit from formal education.

(g) Help students cope with a changing world of work through developing career strategies which can lead to an adequate level of income and responsibility.

(h) Create within the student a sense of self-reliance and awareness which leads him to seek out appropriate careers with realistic aspiration levels.

(2) Deal with a variety of complex questions which may arise from a radical remodeling of the secondary curriculum. To illustrate, what role secondary teachers will play in the

teaching-learning process; how will the local school deal with accreditation standards and course requirements that have been established by state statute; what behavioral objectives should be identified; which instructional media and technical innovations will contribute most to efficient, effective, and relevant learnings; what is the proper relationship between vocational and academic aspects of the curriculum; what are the most effective means of self-learning through individualized instruction and learning?

(3) Develop a tolerance for turbulence while establishing a climate for change. As equalling challenging as dealing with the above questions and inherently a part of their solution, is preparing a climate for, and bringing about, change in the attitudes and behaviors of people. For example, the Program Coordinator must creatively develop new in-service teacher training programs. For the curriculum to be learner-centered, as opposed to teacher-centered, teachers themselves must see the desirability of change. The program coordinator must be one who can work in a dynamic environment and tolerate some turbulence throughout the educational establishment. Indeed, when one considers the security and stability the teacher has established after years of experience in a traditional learning environment, this is a most challenging personal objective for each Coordinator.

(4) Develop an integrated comprehensive curriculum for grades nine through twelve. Only by a professional educator giving his full time to the program, will relatedness or gestalt be recognized by observers both inside and outside the local program. A full-time educator should be able to step back at times, reflect, and take a birds'eye view. He should see the school as one of many complex institutions. He should be intimately involved in all aspects of the curriculum as it develops. He must continually determine which learning experiences are most relevant. To provide articulation, he must study the years which precede grade nine and those that succeed grade twelve. A full-time individual in this position should continually relate all dimensions of the curriculum--keeping each in its proper perspective.

(5) Act as an agent for communication. Throughout the development of the curriculum, the Program Coordinator should continually relate and apply relevant information

from the network of schools, private agencies and foundations, the state departments of education, the U.S. Office of Education, universities, and other sources of educational research data, to his local school district. At the same time he bears primary responsibility for informing the above entities about the progress of activities and programs within his school district.

(6) Evaluate each step of the program. The Program Coordinator must establish criteria and effective measurement instruments. It is his responsibility to appraise the entire curriculum-making process. In addition, he must evaluate programs and research information outside his own school district. All aspects of the program must be subject to tests of philosophical and psychological consistency.

Functions

In order to adequately accomplish the above objective, the project coordinator should possess the ability for performing the following tasks:

(1) Specify and evaluate behavioral objectives for the local school district. The Coordinator, working with organizations providing consultative assistance, should draw from behavioral objectives prepared by a variety of sources outside his own district. Together, they must constantly assess the extent to which the curriculum is defined in behavioral terms. They will be involved in using and modifying those objectives that are locally applicable as well as preparing them specifically for the local district. To establish specific behavioral objectives, some of which will be uniquely applicable to the local district, it will be necessary to analyze behavioral requirements which are measurable and can be evaluated on the basis of established criteria. In short, the Program Coordinator, with assistance, must decide to what extent local project objectives have been accomplished. There are two related aspects to the problem of valid evaluation--first, evaluation of the local program, and second, evaluation of individual student growth.

(2) Select and develop instructional materials and media. This involves identifying material and media from educational research which have been found emperically to

make important contributions to the learning process. It also implies that the Coordinator, with consultative assistance, continually acquaint himself with, and evaluate, new additions to the growing fund of information in educational technology. To illustrate, there is currently a spate of research data about individualized instruction; therefore, the following question must continually be asked: Is it applicable to an organic curriculum in my district?

(3) Become involved in training programs within and outside the local school district. The Coordinator must be available to participate in training conferences and meetings sponsored by the Office of Education and other organizations. At times, he will visit various curriculum projects. He must be willing to learn from these activities and apprise appropriate personnel within his own district. In other words, he must learn, and he must teach what he has learned. For example, he will be responsible for conducting several in-service training programs for the purpose of developing the organic curriculum.

(4) Analyze the present nine through twelve curriculum. Before change toward an organic curriculum can be brought about, the coordinator should become familiar with all aspects of the present secondary program. Carnegie units and course requirements will be modified. A study of existing class sizes and class schedules will aid in planning individualized programs. The backgrounds of ninth-graders entering the program should be determined by examining academic and social factors.

(5) Establish relationships and communication with the community. A systemic study of the community should provide information about the nature of the curriculum. What are the projected job needs in the near future? What employment opportunities will exist? What community colleges, four year colleges, or technical institutes have been enrolling graduates from the local districts? What entrance requirements will have to be met? Will an organic curriculum meet these requirements? What is the social structure of the community?

(6) Define the tasks and roles of community elements. These may include industrial leaders or instructors from industry who can play a vital role in an organic curriculum. In order to carry out this and the above functions, the coordinator will be a liasion between the community and

school. The role will involve drawing resources and information from the community and informing the community about the progress of the curriculum. He may become associated with a wide variety of community organizations. The Coordinator also will be responsible for selecting and describing the functions of those who will be most closely involved in the implementation of the curriculum--teachers, administrators, guidance counselors, consultants, etc. He will also be responsible for coordinating the curriculum with activities and requirements of his state department of education.

(7) Plan and try-out the program in selected schools within the district. The Program Coordinator along with the Superintendent and his staff is charged with the responsibility for seeing that the organic curriculum works. Planning involves interpreting information and the results of work done by other schools in the network and other agencies to the local system when appropriate. As the program is implemented, it must be subjected to continual evaluation by empirical means. Based on the feedback from the evaluation, the Coordinator should provide constant revision. Throughout development, implementation, and evaluation of the local program, there should be national coordination.

The Program Coordinator

In order to carry out the many tasks and deal with complex educational problems, the Program Coordinator must have had a variety of experience in his educational career. He should be well grounded in the behavioral sciences and humanities. He should have a broad background of teaching and administrative experiences at the secondary level. Demonstrated research ability through participation in various research programs, such as action research projects, will have prepared the Coordinator for implementation and evaluation of the total program. To establish a climate for change, the Coordinator must be skilled in public relations. A strong background in curriculum work and a thorough understanding of philosophical, psychological, and social bases for curriculum decision-making will promote implementation of an organic curriculum. Obviously it is recognized that not all men are so well equipped, therefore, each Coordinator must engage in self-study and involve himself in U.S. Office of Education projects and other programs to remedy any deficiencies. In conclusion, perhaps the most important characteristic of the individual is a dedicated commitment to an optimum educational program." *

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* Prototype of Proposals to Hire Fifteen Program Coordinators to Develop the Organic Curriculum, by Jack C. Morgan U.S. Office of Education, Washington, D. C., August 1967

SUMMARY OF WORK PERFORMED UNDER THIS CONTRACT

Introduction The Program Coordinator selected by the Houston Independent School District was at the time Principal of B. T. Washington High School. This person had considerable experiences in high school administration and curriculum design. He possessed most of the qualifications described in the proposal job description. The selected coordinator would remain as titular head of the B. T. Washington High School and share the traditional duties of a principal with several assistants. Thus release time would be available to him for coordination of the development of an organic curriculum in the selected project school.

1. Target site:

   B. T. Washington Junior-Senior High School was selected as the pilot ES '70 school for the Houston Independent School District. This school site would serve as a Research and Development Center. All activities related to ES '70 would be concentrated here.

   There were 2,200 students enrolled at B. T. Washington. The racial make-up was uni-ethnic, being all black. No non-blacks were enrolled. The socio-economic background of the students was principally in the low-income bracket. The curriculum of the school was traditional. The graduates of B. T. Washington historically followed the pattern of: 10% to college, 90% terminal upon completion of high school. The drop-out rate was normal based on nationwide statistics for inner-city schools. The instructional staff was youthful (average age 31 years) and generally well-trained (35% held Master's degrees from accredited institutions). The racial make-up of the faculty was 5% white, 95% black. The administrative staff consisted of two assistant principals, six counselors, one dean of girls, one registrar, one nurse, two librarians, one secretary, and four clerks.

2. On August 21-31, 1967 the Program Coordinator attended a workshop for ES '70 Coordinators held at the Bloomfield Hills School District, Bloomfield Hills, Michigan. He participated in the following activities:

   a. The Systems Approach to Education
   b. The Role of Society in the School
   c. The Role of PERT in Program Planning and Management
   d. An informal discussion of problems related to the initiation of change in the local school district

3. Upon returning to the Houston School District the Coordinator initiated the following activities:

   a. Secured approval for major areas of involvement for the current school year from the Superintendent.
   b. Determined the financial commitments of local district to ES '70.
   c. Developed slide-tape presentation to explain purpose of ES '70.
   d. Presented slide-tape show to the following groups:

      (1) School Board
      (2) Principals
      (3) Teachers
      (4) Professional organizations

4. On September 28-29, 1967, the Coordinator attended an ES '70 Coordinator's meeting held in Duluth, Minnesota. The following was accomplished:

   a. Instructions were received on the development of preliminary PERT charts.
   b. Guidelines for drafting behavioral objectives were received.

5. Upon returning to the Houston School District, the following was initiated:

   a. Orientation of school staff as to the Objectives of ES '70.
   b. Selection of appropriate staff personnel to participate in formulating behavioral objectives.
   c. Contacted Regional Laboratories and supplemental resource centers.
   d. Conducted an analysis of local staff characteristics in order to identify those persons who could operate effectively in changing situations.
   e. Conducted an analysis of individual district programs to determine relationships between current practices and ES '70 objectives.
   f. Submitted base-line data to the E. F. Shelley Company Systems Management Firm for ES '70.

6. The Program Coordinator and the Director of Program Development of the Houston Independent School District attended an ES '70 general meeting on February 16-17, 1968 held in Atlanta, Georgia. The following occurred at this meeting:

a. Dr. Robert Morgan, Deputy Director of the Bureau of Research (Division of Comprehensive and Vocational Education) presented a brief review of the major goals and premises of the Educational Systems for the 70's Project. He also outlined some of the broad categories of activities presently underway and being planned as a part of this project:

(1) Preparation of teachers for teaching in ES '70 schools beginning in 1973 when the program is expected to become operational. A packaged program was prepared under the tentative title of "Basics of Educational Technology" to be used by school personnel.

(2) Planning of facilities for the ES '70 programs. This would include modification of existing facilities as well as new structures.

(3) Plans for a conference to be held in New Orleans, Louisiana, on March 6-8, 1968, was announced. This conference would include teachers, principals and students from the project schools along with leading authorities from the various disciplines, representatives from national curriculum projects, behavioral scientists and technologists.

(4) Contracts were to be let to qualified groups for the development of operational definitions of performance objectives as they apply to the goals of the ES '70 program. Other contracts were to be let for the development of "instructional models" based on these performance objectives as they are eventually defined on an inter-disciplinary bases.

(5) A contract was negotiated in which regional accreditation associates throughout the nation would work together on the solution of accreditation problems which might grow out of the ES '70 program. Some kind of "Carnegie Unit Equivalencies" needs to be established for ES '70 graduates.

b. Dr. Edward Welling announced a proposal for a Management Seminar for ES '70 Superintendents.

c. Need was expressed for a means of description of the ES '70 program that could be used by all member districts. This would be a "model description".

d. Mr. David Bushnell suggested that a month-long internship at the Office of Education in Washington, D. C. be planned for ES '70 coordinators.

e. A document proposing establishment of definite policies and procedures for operation of the ES '70 program was presented.

7. Attendance at the Atlanta Conference led to the following activities by the Program Coordinator:

a. Plan release time for a core of teachers to work on instructional units.

b. Plan for sensitivity training.

c. Plan for consultant services in the areas mentioned in (a) and (b).

d. Plan restatement of objectives in behavioral terms by discipline.

8. On May 23-24, the Deputy Superintendent of Secondary Schools (HISD) and the Program Coordinator attended a conference at San Mateo, California . Essential proceedings were:

a. A publication compiled by E. F. Shelley and Company - "Reported Primary Network Innovations" was distributed to all participating school districts.

b. A list of questions submitted by ES '70 coordinators was arranged according to categories and responses secured from appropriate Office of Education personnel was distributed to participants.

c. Critique sessions were conducted on the ES '70 Document Draft and distributed to appropriate persons.

9. Plans were crystallized on the following:

a. A year-long in-service training program.

1. A series of sensitivity sessions for the purpose of changing attitudes of teachers in regard to acceptance of innovations and the acceptance of new roles of teachers.

2. Teachers would be trained to write behavioral objectives.

b. A selected group of teachers would attend ES '70 and other related workshops during the summer of 1968. Upon returning, these teachers would form a cadre to train other teachers to write behavioral objectives.

10. Cooperation was obtained from the director of an annual workshop for teachers, counselors and administrators entitled "Employment Opportunities for Minority Youth." This workshop is sponsored by a group of large businesses and industries called Plans for Progress, Inc. Information that was obtained through these workshops would be used to (1) determine employment opportunities that are available to high school graduates (2) develop a task analysis of the job requirements and (3)determine skills that are common to families of occupations. Relevance of this activity to the ES'70 effort was obvious. It would form the basis for planning vocational offerings using the "Cluster Approach to Vocational Education".

11. Contact with Teacher-Training institutions included:

a. Prairie View A. & M. College

1. to provide graduate interns to work closely with the staff of B. T. Washington High School in developing and testing "learning packages"

2. to provide direct assistance in the recruitment of new teachers at the project school.

b. Texas A. & M. College for a Systems Analysis Project. The project would have as its purpose the use of Computer Simulation to:

1. Model a continous progress curriculum in social science.

2. Track student's progress through the curriculum.

3. Determine cost-effectiveness.

c. Sam Houston State College, Huntsville, Texas, proposed that a corps of faculty members be designated as participants in the ES'70. These persons would represent the fields of education, fine arts, health, and physical education, language arts, linguistics, mathematics, psychology, guidance, and one or more fields with vocational orientation.

12. A proposal for the establishment of a supplementary curriculum center at B. T. Washington High School was submitted to USOE.

13. On March 6-8, 1968 a project school teacher, a project school student attended the ES '70 New Orleans conference. This was a gathering of specialists mentioned in F-3 of this report. The objective of the conference was to participate in a dialogue around a massive revision of secondary education.

The following assumptions formed the nucleus around which the conference was planned:

[1] a. "It was assumed that many different groups of scholars and educators have a "vested interest" in the secondary curriculum and that their priorities as to educational experience will differ greatly.

b. It was assumed that the conference should provide opportunity for open expression of differences and an opportunity to explore consensus as to objectives for the '70's.

c. It was assumed that participants at all levels of the educational enterprise - academic scholars, professional educators, local school administrators, teachers, students, and federal state agencies - should express consultative thinking to ES '70 and should have opportunity and responsibility for listening to one another."

[1] See Schaible, Lucille - "The ES '70 New Orleans Conference, Chapter V of "ES '70 in Theory and Practice" USOE: June 1969

14. On October 7-10, 1968 a Coordinator's meeting was held in Bloomfield Hills, Michigan. The Program Coordinator attended and participated in the following:

a. Discussion of a written description "Statement of the Functions of ES '70 Coordinators".

b. Group conferences scheduled for Coordinators and USOE representatives.

15. On November 21, 1968 the Program Coordinator, Superintendent of Administration and Instruction and the Director of Federal Programs attended a Network Meeting in Washington, D. C. Significant activities were:

a. Review of incorporation papers prepared by E. F. Shelley and Company, Inc., Counsel.

b. Review of back copies of minutes of ES '70 Network Meetings together with a document prepared by the Chairman of the Executive Committee concerning the rationale for the employment of an Executive Secretary by the Network and a job description of his functions.

c. Coordinators were canvassed to determine their needs in connection with programming for the disadvantaged. (See Appendix B)

16. On January 14, 1969 the present Principal-Coordinator, F. D. Wesley, decided to relinguish the job of Program Coordinator in favor of the Head of Guidance Department at B. T. Washington High School, Arthur L. Pace. Mr. Pace had been an understudy of Mr. Wesley and had some knowledge of the kind of work that needed to be continued. Since both men would be housed in the same building a Principal-Coordinator Team was conceived to replace the two roles formerly played by one person, Mr. Wesley.

17. On February 20, 1969, the new Program Coordinator assisted Drs. Joseph P. Arnold and Edward T. Ferguson, Jr. in conducting a survey of the City of Houston's employment trends and outlook for the future. Visits were arranged with local employment agencies, the local Department of Labor, Chamber of Commerce, Manufacturers Associations. In addition, a questionnaire was administered to students and parents. This questionnaire was designed to determine vocational aspirations of the parents for their children and of the children themselves.

This activity was a part of a network-wide (18 school districts) study to develop an approach and procedures for incorporating the occupational characteristics of the communities into school programs. Two objectives were focused upon in the study (1) identifying those occupational areas which tend to be in high manpower demand throughout the eighteen communities and (2) developing guidelines or a procedural framework for translating manpower requirements to educational programs.

18. On March 2-3, 1969, the Program Coordinator provided logistical support for the Houston meeting of Coordinators. The following are excerpts from the minutes of this meeting:

a. Mr. Robert Pruitt, USOE, "Clarify our concepts about ES '70; apply the term to the Organic Curriculum, as originally conceived. Repackage it in terms acceptable to men in the Office of Education and Congress whose chief concerns are:

- education of the disadvantaged
- early childhood education
- bi-lingual education
- relevant general education
- "zero-rejects"--etc."

Mr. Pruitt continued, "Foster cooperation within the network with other agencies". These remarks by Mr. Pruitt were preceded by the statement that the changing "political winds" in Washington had caused a drastic curtailment of funds. The original promise of adequate funds had dwindled to a mere $1,000,000. The ES '70 network must now seek funding from other sources.

b. Dr. George Donahue of E. F. Shelley Co. suggested that "the research money be divided among the 18 districts and see what emerges". Dr. Donahue continued,"or fund an effort (of about six months duration) to establish the state of the art and to disseminate the materials already 'on the shelves'." This was an alternative to spending the entire sum on the development of performance objectives in specific fields.

These two remarks by Dr. Donahue and Mr. Pruitt are mentioned here because they tend to point the direction that the ES '70 effort must take in the future. Local funding must play a greater role in supporting the development of the Organic Curriculum.

19. The Coordinator; Assistant Superintendent, Mr. Arthur M. Gaines, Jr.; and the former ES '70 Coordinator, Mr. F. D. Wesley attended the ES '70 Network Meeting in San Antonio, Texas. At this meeting the Articles of Incorporation of ES '70 were introduced. Network members were canvassed for desire for membership in the proposed ES '70 Corporation which would become a non-profit organization that would seek funding from sources other than the Office of Education for the continuation of the development of an Organic Curriculum. The Corporation would hire an Executive Secretary that would provide centralized leadership for members among other assigned duties. Membership fees would be required of each district, prorated on the basis of their annual budgets. The minimum for smaller districts would be $2,500, while maximum for larger districts would be $6,000. Proceeds from membership fees would provide support for the office of the Executive Secretary. Local PERT Charts were audited at this meeting (see) Appendix C.

This plan was submitted to the ES '70 Advisory Committee of the Houston District. Final approval of the General Superintendent and the Board of Education was secured. Houston would contribute $6,000 for membership in the newly organized ES '70 Incorporated.

20. On March 12, 1969 the Coordinator attended a conference at the Dinkler Plaza Hotel in Atlanta, Georgia. This conference concerned itself with Part D (Exemplary Programs) of the Vocational Education Act of 1963, as Amended, 1968. The Coordinator hoped that this conference would provide the information needed to tie efforts of the ES '70 effort in Houston with those of Grant Venn's office in the Office of Education and with those of the Vocational Education Departments of the State of Texas.

21. Upon returning from the Atlanta (Vocational Education) Conference, the Coordinator met with Mr. Edward Redding, Chairman of the Vocational Advisory Committee for the State of Texas. During the conference the local ES '70 effort was explained to Mr. Redding. Further, the State Plan for Vocational Education in Texas was discussed.

The Coordinator met with Mr. R. P. Johnson of Shell Oil Company, Houston, Texas to explain the Organic Curriculum in an effort to get support for a Graphic Arts Program that was planned for the Project School (B. T. Washington - Houston)

22. On April 20, 1969, the Coordinator visited the American Institutes of Research in Palo Alto, California. A conference with Dr. Brian Jones revealed the possibility of the Houston Project School's participation in a Field Test of a Comprehensive Guidance Program that was developed by Dr. Jones and others. This Field Test would be conducted by AIR. Three high schools of two different school districts would participate in consortia. The schools, located in Houston, Texas and San Jose, California, had in common large enrollments of disadvantaged underachievers. (i.e. Blacks and Latin-Americans). Because of the "remoteness" of Texas to California, the original proposal (which included the Ravenswood School District in Palo Alto. This district was eliminated because of internal troubles) would have to be amended. This was completed and submitted to USOE for funding. (See Appendix I)

23. While in Palo Alto a conference was held with Robert F. Mager and plans were made for a workshop aimed at determining expected adult roles of high school graduates of Houston Public Schools. Dr. Mager served as a resource person for planning this activity, but did not attend the conference.

    Upon returning to Houston the Coordinator met with Dr. J. B. Jones of Texas Southern University to plan the above mentioned workshop. Community persons, teachers, and school administrators, representatives from business and industry participated as contributors in the final activity which was held on May 18, 1970 at the Sheraton Inn, Houston, Texas.

24. On April 25, 1969, the Program Coordinator assisted Dr. Joseph Strehle, Administrator in Charge of Federal Programs for the Houston Independent School District, in the writing of Management Techniques Proposal. The Coordinator delivered this proposal to the U.S. Office of Education. (See Appendix J)

25. On June 26 and 27, 1970, the Assistant Superintendent, Mr. Arthur M. Gaines and the Program Coordinator attended a network meeting in Willingboro, New Jersey, participating in a reaction panel that concerned itself with the statements of Pruitt and Donahue in Houston, March 2-3, 1970. The Coordinator, as a discussion leader, made the following recommendations:

a. Place emphasis on the local effort.

b. OE should fund short term rather than long term research.

c. Stress efforts in the area of instructional materials and practices and career guidance.

26. On June 27-31, 1969, the ES '70 Principal, an Assistant Principal and a Counselor attended a conference at Harvard University on Computer Assisted Guidance. (See Appendix D)

27. On July 15, 1969, the Coordinator attended a Principal's workshop at Duluth, Minnesota. The following significant activities occurred: (See Appendix D)

a. Organization of ES '70 Principals.

b. Problem-Solving Techniques Exercise.

c. Discussion of Accountability with Leon Lessinger, Associate Commissioner ESEA, USOE.

d. Dialogue with James Popham, UCLA, Behavioral Objectives Bank and Evaluation.

e. Dialogue with Thorwald Esbensen - Working With Behavioral Objectives.

f. Discussion with Don Miller of PEP on Planned Program Budgeting Systems.

g. Discussion with Simon Wittes - Interracial and Intergenerational Conflict.

h. Discussion with Walter Foley, University of Iowa - Flexible Scheduling and Management Information.

28. Upon returning to Houston from the Duluth Workshop, the Coordinator, in conjunction with the Principal of the project, school, initiated plans for flexible (modular) scheduling at B. T. Washington, the project school. Contact had been made, at Duluth, with Dr. Walter J. Foley, winner of the Management Techniques Grant from USOE, and Director of (IEIC) Iowa Education Center at the University of Iowa. Houston would

utilize the Stanford School Scheduling System. IEIC had a contractural agreement with Educational Coordinators (developers of SSSS Scheduling System) and in addition, considerable experience in Modular scheduling services. Funds were secured from a local Title III Project (Central Cities) to finance consultant and computer services needed for implementation of Modular scheduling at B. T. Washington. A contract between the Houston School District and IEIC was negotiated. The ES '70 Coordinator (Houston) was assigned the duty of designing and conducting flexible scheduling in-service training for teachers, parents, and students. This would be a one-year in-service and orientation project. The implementation target date was September, 1970. (See Appendix H)

29. On July 20, 1969, two teachers were sent to Willingboro, New Jersey, for an ES '70 workshop to learn how to write learning packages. These teachers represented two disciplines, English and Vocational Home Economics. The objective of this activity was to provide key persons who would conduct in-service training upon returning to home schools.

30. On September 5, the Coordinator attended a one-day briefing session at the Ohio State University, Division of Vocational and Technical Research. Subsequent to and as a direct result of this activity, the Coordinator served as discussion leader at the Annual Vocational Teacher Education Seminar. This seminar was held at Miami Beach, Florida. In addition to duties as a discussion leader, the Coordinator served as a panelist with Dr. William Lummis, Associate Commissioner of EDPA, USOE. The significance of this activity lies in the fact that a concentrated effort was being made to discover sources of funds for the continuance of the local ES '70 effort. It was felt that personal contact with informed persons would assist in this effort.

31. In October, 1969, the Coordinator attended the Fall meeting of the Network. This meeting was held in Quincy, Massachusetts. Proceedings facilitated interaction between person's who were engaged in research related to an Organic Curriculum and ES '70 Coordinators. This was an effort to inform the former group of the problems and activities of the latter and vice-versa. While in Quincy, the Coordinator made contact with teachers and administrators in Project Able and Project Plan for the purpose of studying the feasibility of implementing some modifications of the two projects in the Houston Project School.

32. On January 26-29, 1970, the Coordinator attended the Aerospace Foundation Conference in Washington, D. C. While in attendance, conferences were held with Dr. Sue Brett, Project Director, USOE; Dr. William Ullery, Director of Project ABLE and Mr. Warren Smith of the Broward County (Florida) School System. Concerns of these conferences were: Budget revisions (local ES '70 Budget), Project ABLE, and Flexible (Modular) Scheduling, respectively.

33. In March, 1970, the Coordinator and the ES '70 Principal attended a two-day conference at the University of Iowa. This conference dealt solely with Flexible (Modular) Scheduling.

34. In April, 1970, the Coordinator attended a Network meeting at the Institute of American Indian Arts, Santa Fe, New Mexico. A workshop was held here that concerned itself with Interdisciplinary Objectives and a Follow-up activity to the Willingboro Teacher's Workshop on "Learning Packets". Also in attendance was Mr. Arthur M. Gaines, Jr., Assistant Superintendent, Area I, HISD.

35. In June, 1970, the final Network meeting under the auspices of USOE was held in Chicago, Illinois. The Coordinator participated in a workshop "Research Utilization in Problem Solving". Mr. Gaines represented the Superintendent at this meeting.

36. August, 1970 brought fruition to the Field Test of a Comprehensive Guidance Program mentioned in 22. Notification of funding came from USOE. Drs. Brian Jones and Dennis Nelson of AIR, Palo Alto, California, conducted a three-day workshop for project counselors and administrators.

37. The ES'70 Principal, Franklyn Wesley, served as Consultant to the Tri-University Project entitled "Behavioral Objectives in the Teaching of English". The three universitites are the University of Illinois, University of Indiana, and Purdue University. (See Appendix G)

38. The Program Coordinator arranged a conference with Dr. George D. Stoddard, Director of the ES'70 Curriculum Arts Project; the Fine Arts Staffs of B. T. Washington and Central Administrative Personnel of the Houston Independent School District.

39. A recommendation from Mr. Arthur M. Gaines, Jr. (HISD) to the Board of Directors of ES'70 Inc. resulted in a reduction of membership fees to $2,500 for all districts.

FINDINGS

Perhaps the greatest success of coordination of an Organic Curriculum was realized in the area of Staff Development. Conceivably, this would be the area of greatest concentration of effort at the onset upon securing approval for participation in the ES '70 program was secured. Coordinators were briefed and trained first of all to understand the systems approach to education, then to manage the training of staff members. The latter activity seemed to be of prime importance and received top priority. The Coordinator was faced with the task of changing or restructing procedures and methods of instruction without interrupting the daily schedule of classes. The groups of teachers that were sent to Duluth, Willingboro and San Mateo formed the nucleus of the Staff Development Program at B. T. Washington High School (Project School). These teachers were given release time to conduct daily classes for other teachers during their conference periods. This seemed logical and preferable to evenings after school and weekends. The teaching teachers used commercially prepared materials (VIMCET, Deterline). Eventually the entire faculty became aware of the need for change in their teaching methods. Many of them purchased publications by R. F. Mager, James Popham, Bruce Tuckman and others concerned with behavioral objectives, learning packets and individualized learning. See Appendix E.

Enthusiasm began to spill over into the classroom and several teachers developed instructional materials in an effort to apply the skills they had learned. The initial efforts were slow and reluctant but soon gathered momentum and the entire community (Houston) began to inquire about the local ES '70 effort. Many viewed ES '70 as a potential source of large sums of money, and rightly so, USOE made this promise initially. Others recognized ES '70 as the process it was intended to be. Local support of the program became more evident day by day. Title I and Title III funds were used to support ES '70, for at last this seemed to be a program that would properly utilize funds and eventually assist in the accomplishment of the intent of Title I and Title III at the secondary level.

The successful attempt to gain inclusion in the Field Test of a Comprehensive Guidance Program near the end of the funding period by USOE provided a boost to the morale of the local ES '70 effort. This is a three-year grant and promises to provide a model for guidance activities in an individualized instructional system.

Knowing where one is and where one wants to go, how one is to get there and recognizing arrival is the essence of productive change. The Coordinators in their effort to bring about change have contributed

significantly to the local educational system and in an indirect sense to the National ES '70 effort. All efforts were directed to existing physical and personnel resources. The faculty and administration of B. T. Washington have changed significantly from stagnant, ineffective methods and philosophies of learning to that of managing learning activities based on performance criteria. The hope for individualization of instruction and the enthusiasm for the promises of an Organic Curriculum was evidenced in the dedication and hard work put into the Flexible (Modular) Scheduling Project by staff members of the Project school at a time when ES '70 was rumored to be dying.

The expertise gained by Coordinators together with the ideas gained through inter-district visitations and workshops that have provided access to information and resource persons is immeasurable in terms of future value to the Houston Independent School District.

The continuation of membership in ES '70 Inc. is evident of the faith in the effort by the Central Administration of the Houston Independent School District.

The climate for change has in fact been created. The effort to develop a learner responsive instructional system that truly integrates academic offerings is still very much alive.

CONCLUSIONS AND RECOMMENDATIONS

The effort to coordinate the development of an Organic Curriculum was punctuated by many pitfalls. Some were anticipated and some were not. Evaluation of the effort is not an easy task. The primary goal was "the restructing of secondary education" to provide each student an education highly relevant to his experience, to his aspirations, and to the adult roles which he would play, and which would be economically practical within available public resources".

Coordination of the development of an Organic Curriculum had as its primary mission in this massive experiment, the creation of a climate for change in the local community. In addition, to interpret the objectives of an Organic Curriculum to parents, school administrators, students, teachers, and other influential groups and organizations. In other words, to lay the foundation for the new "structure". As is true in the construction industry, the strength of a structure is in its foundation. The energies and enthusiasm of the Coordinator in the execution of his assigned task would determine the degree of success that an Organic Curriculum would enjoy, provided, of course, that all other resources of the total plan were available for his support. This would mean that the local-state-federal partnership must in effect exist. The true existence of this partnership would be the key to success. The following optimum conditions must exist:

1. Local support must be a reality in terms of philosophy and acceptance of the need for change.

2. The aims and goals of ES '70 must be planned nationally, but be locally modified and administered.

3. ES '70 must be viewed as a process not a product.

4. ES '70 would be two systems --the network system of validation sites and the educational system it was meant to develop. The attainment of the latter would obviate the former.

5. Federal and State funds must be available for support of each local effort. However, local educational agencies must be held accountable for each dollar spent in terms of behavior change in students.

6. ES '70 related research by universities and other organitions must be coordinated, during developmental stages, with ES '70 school districts.

7. An educational research and development program of this kind must be exempt from political dogmas and partisan support.

8. Performance contracting is a promising approach to accountability for results. ES '70 Network school districts are potential contractors for educational programs that are appropriate for students. The expertise necessary for performance contracting is already present in ES '70 project schools.

APPENDICES

APPENDIX A

ROSTER OF ES'70 PERSONNEL
OF THE HOUSTON INDEPENDENT SCHOOL DISTRICT

Superintendents - Mr. Glenn Fletcher - May 1967 to March 1969
Dr. George G. Garver - May 1970 to Present

Deputy Superintendent - Dr. Woodrow Watts - May 1967 to Present

Assistant Superintendent - Mr. Arthur M. Gaines, Jr. - January 14, 1969 to Present

Program Coordinators - Franklyn D. Wesley - May 1967 - January 1969
Arthur L. Pace - January 1969 to Present

Advisory Committee

August 1967 - April 1968

Dr. Woodrow Watts, Deputy Superintendent for Secondary Schools
Dr. Alberta Baines, Assistant Superintendent for the Coordination of Curriculum
Mr. J. B. Whiteley, Assistant Superintendent for Vocational and Adult Education
Dr. Richard Bruns, Assistant Director for Curriculum Coordination

April 1968 - Present

Dr. Woodrow Watts, Deputy Superintendent for Secondary Schools
Mr. John R. Eaton, Associate Deputy Superintendent for Administration
Mrs. Ella Porter, Assistant Superintendent for Secondary Curriculum
Mr. J. B. Whiteley, Assistant Superintendent for Vocational and Adult Education
Dr. Richard D. Slater, Associate Deputy Superintendent for Curriculum, Research and Program Development

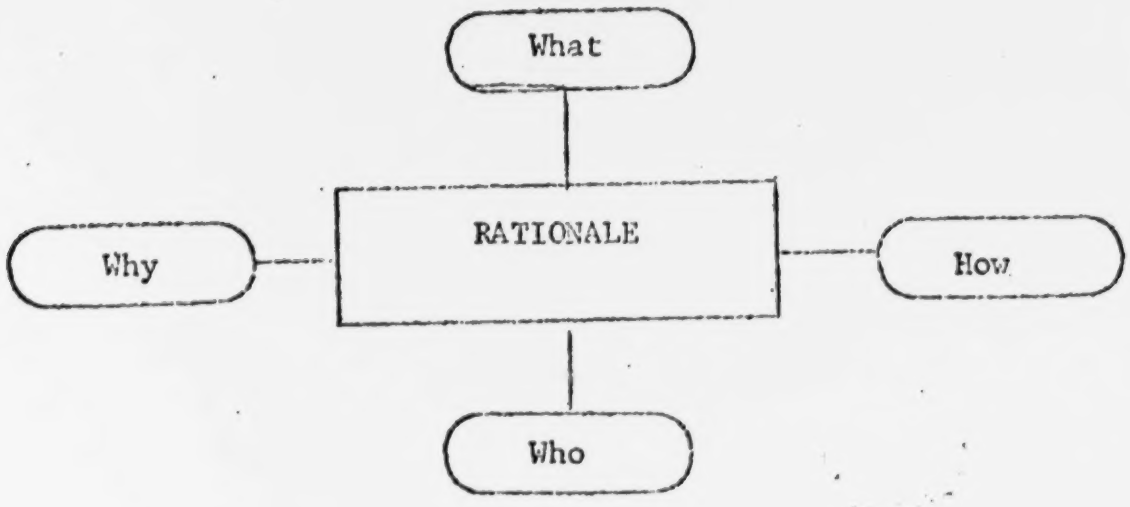
APPENDIX B

A MODEL FOR DEVELOPING AN ORGANIC CURRICULUM

IN GRADES 7 - 12 AT BOOKER T. WASHINGTON HIGH SCHOOL

Rationale for the Model

The following model is a description of an educational system for Booker T. Washington Junior-Senior High School. The rationale can, perhaps, be best explained by providing the answers to the questions - Why, What, and Who?



THE WHY - The present curriculum in our school, as in most of today's schools, is not adequately preparing a majority of our students for the opportunities and problems they will face as adults. Because our present program focuses primarily upon academic requirements, our students receive little guidance in focusing on the pressing career concerns of each

individual: careers in the world of work, as a citizen, as a parent, and in personal development. The organic curriculum which will be developed for our school represents an attempt to eliminate these deficiencies.

THE WHAT - An organic curriculum is one that unifies the teaching of academic and occupational training, career counseling, work study experience, home and family living, and personal development in a way and on a level that will be meaningful to all students. The ingredients of this curriculum will include: individualized instruction for each student; training that is highly relevant to the adult roles which students will play as workers, parents, citizens, and socially adjusted individuals; teaching strategies based on the behavioral and related sciences; and the use of educationally oriented technology.

The learner who graduates from this curriculum will possess the necessary qualifications for maximum flexibility in his post-high school options. He might enter a university or a college and successfully pursue an academic program. He might enter a community college or technical school and receive post-high school occupational training, or he might enter employment. The key point is that the learner could decide, after graduation, which option to choose rather than three or four years earlier.

The organic curriculum is built around three areas of concern:

1. The acquisition of basic learning skills
2. The use of the mode of inquiry
3. The development of attitudes and values

The acquisition of basic learning skills is essential because young jobseekers face a society in which there is a continuing shift from

production-oriented occupations to service occupations requiring a broad base of cognitive, communicative, and social skills. Many of the former types of entry-level occupations are now unavailable to youngsters entering the labor market. Furthermore, while qualifying for an entry-level occupation is a necessity, a person's first job can no longer be viewed as a final career commitment, but must be looked upon as the first in a series of job changes leading, hopefully, to a satisfying career. This means that each student must acquire the basic learning skills necessary for coping with our constantly changing society. Some of the skills that must be mastered are:

1. The ability to read and understand what has been read.
2. The ability to think, or organize, relate and give internal meaning to the bodies of knowledge in the various disciplines.
3. The ability to extract information from reading, seeing, listening, and dialogue with others.
4. The ability to define social, economic, political, and moral issues, to comprehend their implications and relations with one another, and to analyze these issues in a critical manner.
5. The ability to locate, compile, and weigh the evidence and data necessary for making decisions when and where decisions and choices appear to be necessary.
6. The ability to separate fact from opinion and to give both their proper role in the making of decisions.
7. The ability to make effective and responsible decisions.
8. The ability to express one's self clearly and effectively, both orally and in writing, in the process of relating knowledge to behavior.

The organic curriculum stresses the mode of inquiry as the most effective means for teaching cognitive learning (knowledge). This approach varies slightly with different disciplines but basically follows the format suggested by the Carnegie Institute of Technology Curriculum Center:

Steps in a Mode of Inquiry

1. Recognizing a problem from data

2. Formulating hypotheses

    a. Asking analytical questions
    b. Stating hypotheses
    c. Remaining aware of the tentative nature of hypotheses

3. Recognizing the logical implications of hypotheses

4. Gathering data

    a. Deciding what data will be needed
    b. Selecting or rejecting sources

5. Analyzing, evaluating and interpreting data

    a. Selecting relevant data
    b. Evaluating sources

        (1) Determining the frame of reference of an author
        (2) Determining the accuracy of statements of fact

    c. Interpreting the data

6. Evaluating the hypothesis in the light of data

    a. Modifying the hypothesis, if necessary

        (1) Rejecting a logical implication unsupported by data
        (2) Restating the hypothesis

    b. Stating a generalization

In the area of attitudes and values, the organic curriculum is concerned with helping students to develop and identify values and to shape attitudes that will lead to individual self-realization and civic responsibility.

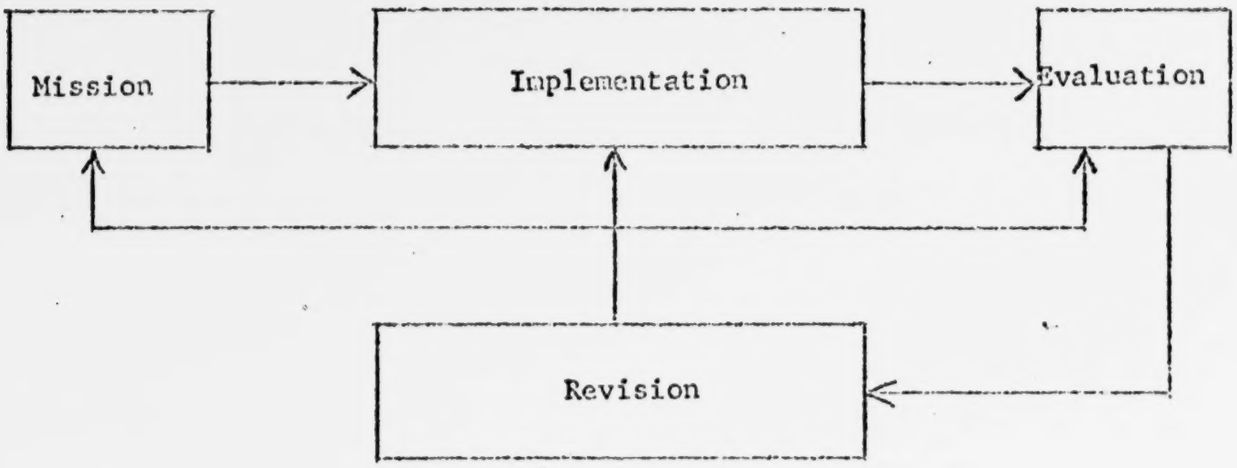
Self-realization is an awareness by the students of his potential and a desire to maximize his capacities and talents in such a way that he fulfills this potential. The results of achieving this goal should be a positive self-concept, self-confidence, personal motivation, and behavior that reflects an essential inner happiness.

The goal of civic responsibility stresses the development of the types of behavior on which a free society depends. Five interrelated goals for this area are listed below:

1. Economic and social behavioral patterns that manifest individual responsibility and self-reliance.
2. Acquiring the knowledge necessary for effective participation in the governing process of the democratic society.
3. Effective participation in the shaping of public policy.
4. Patterns of behavior that recognize and ensure equal rights and opportunities for all in a racially and culturally diverse society.
5. A reverence for the law, and behavior that covertly and overtly conforms to public policy, democratically made.

THE HOW - The systems approach is used to build the curriculum. In order to use the systems approach, it is first necessary to produce a highly specific and well-documented plan. A critical part of this plan is a statement of the educational mission or the functional purpose that the system is trying to accomplish. A second critical feature of the systems approach is the precision required in writing learning specifications derived from the mission. A third critical feature is the method of initial evaluation. Evaluation of progress must be made on the basis of systems objectives. The system

is evaluated on its ability to achieve its objectives. The chart below indicates the desired flow of work.



The mission objectives are described as the terminal performance expected of the learner. These terminal performance objectives (TPO) are supported by performance data, test scores, and evaluation. To accomplish this, the learner's complete path through each separate course must be planned in advance, with necessary contingencies. The mission objectives (TPO's) represent the desired end product of the organic curriculum. The process of defining terminal performance in detail is critical.

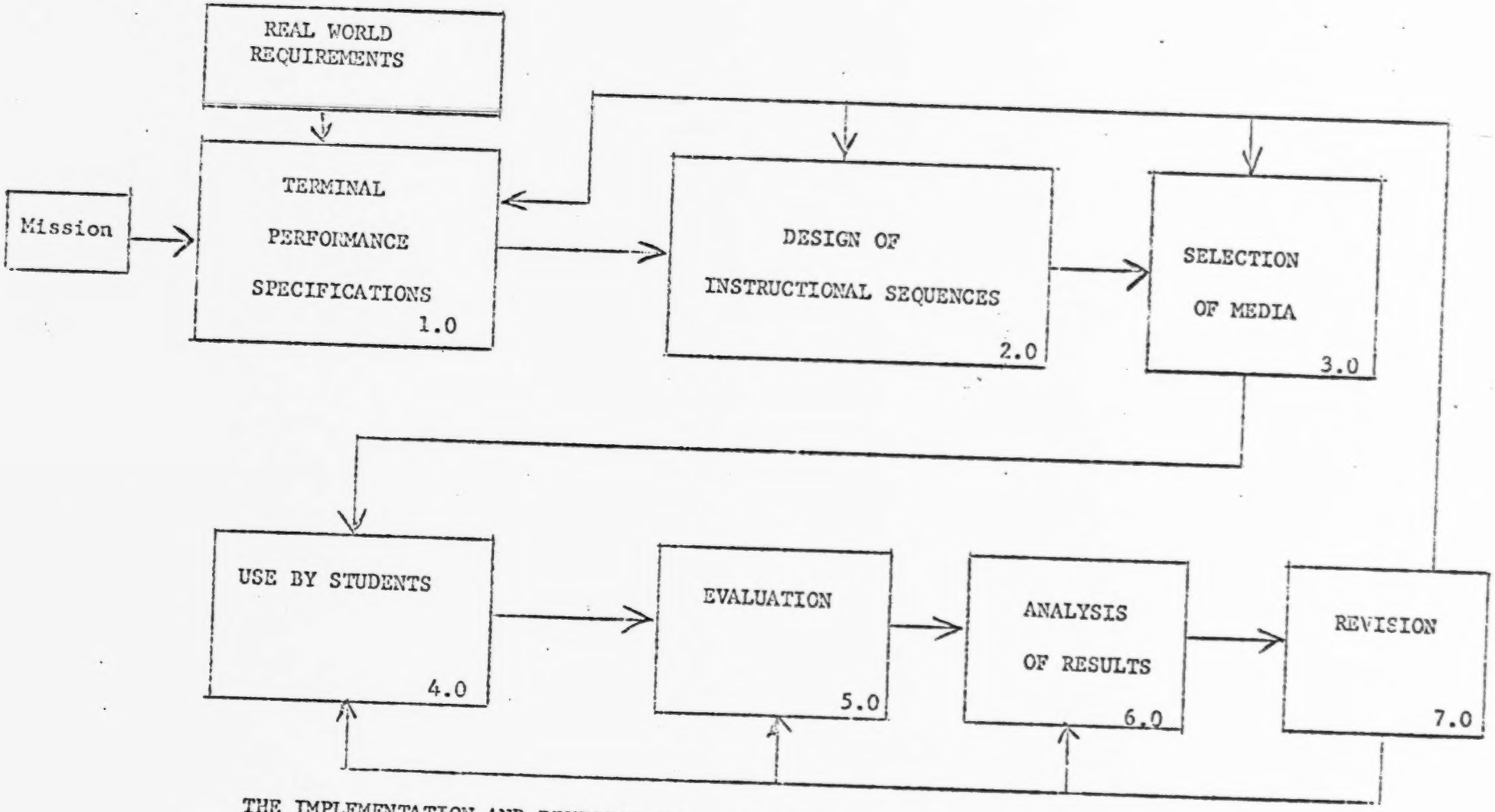
The second step in building the system is that of selecting appropriate materials that will ensure the attainment of the objectives. Modular instructional activities are designed to match the learning characteristics of the learner. The effectiveness of the teaching-learning process is determined through the use of sensitive and sophisticated evaluation instruments.

The final step in the systems design is the use of evaluation data to feedback into the system for revision purposes.

An organic curriculum can be summarized in these statements:

1. Decide what behavior the learner is to learn (Function 1.0)
2. Plan instruction specifically to achieve performance objectives (2.0(3.0).
3. Measure carefully to find out how much was achieved (5.0)
4. Analyze the results to determine any courses of failure (6.0)
5. Revise the plan to try a different approach where required (7.0).

The chart on the following page illustrates the systems approach.



THE IMPLEMENTATION AND REVISION FLOW FOR AN INSTRUCTIONAL SYSTEM.

NOTICE THAT EACH FUNCTIONAL COMPONENT IS REVISED IF THE OUTPUT IS NOT ADEQUATE.

THE OUTPUT OF THE STUDENT IS AN INTEGRAL PART OF THE INFORMATION FLOW.

THE WHO - The teachers should have the responsibility for building the curriculum. The teachers, working with students on a day-to-day basis, will have firsthand information on the kinds of things students are capable of learning, the sequence in which learning occurs, the basic skills the student uses in more than one subject area, and the teaching techniques and materials which work effectively with students. There will, however, be a need for consultant help at certain points of the development process.

CHARACTERISTICS OF AN ORGANIC CURRICULUM

An organic curriculum has the following elements:

1. Behavioral objectives
2. Teaching-Learning activities
3. Performance measures
4. Feedback and revision

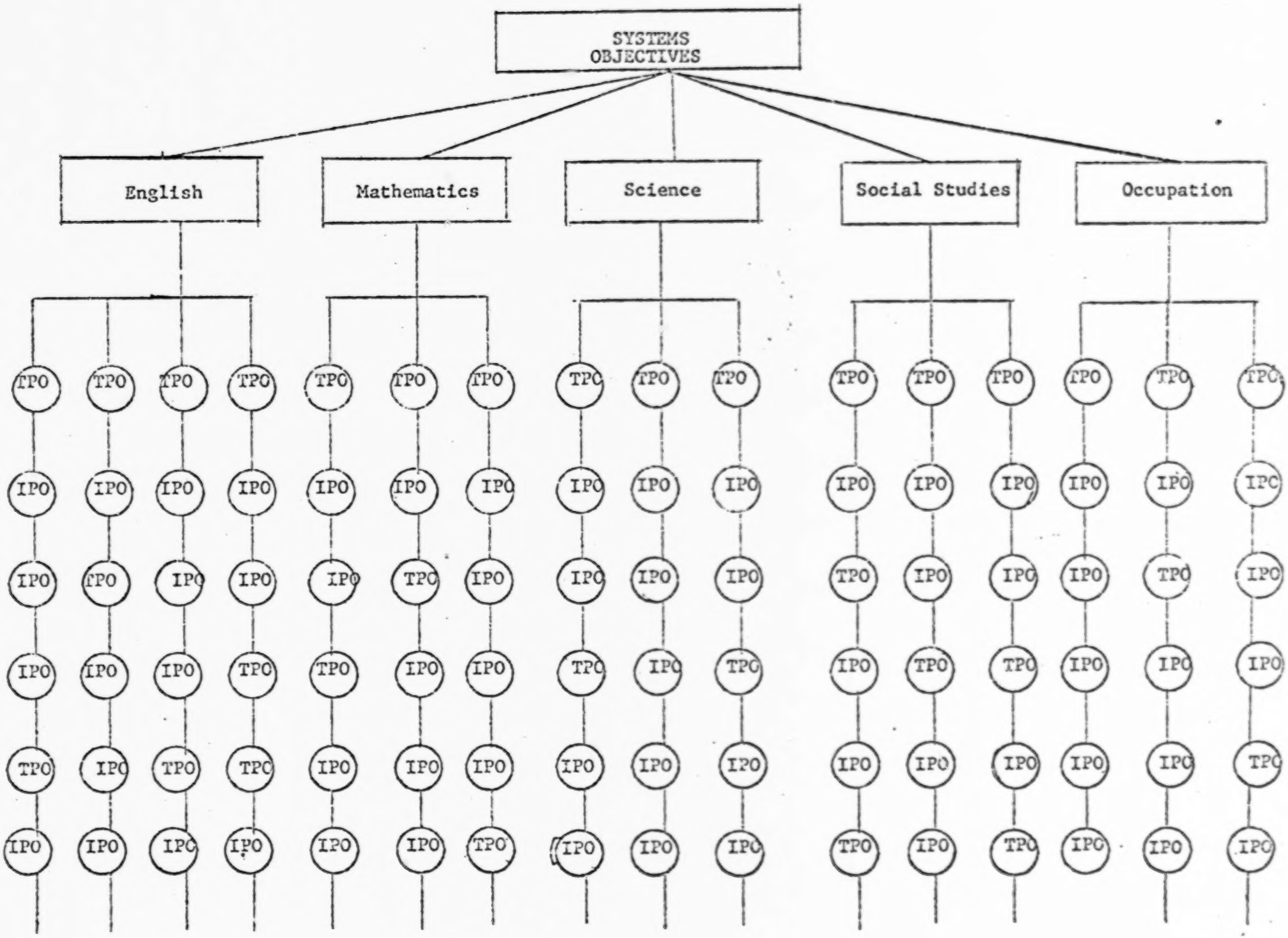
Behavioral Objectives

Fundamental to the success of the organic curriculum is the statement of its specifications. These specifications must be stated in observable and measurable terms. The initial steps in specifying the mission and deriving specific performance objectives are based upon a number of discrete decisions:

1. What are the minimum learning skills that all learners must have?
2. What are the general knowledge requirements necessary for graduation?
3. What relevant employment knowledge and skill development is needed by all learners?
4. What are the basic requirements for personal development?

At the present time the system objectives (the mission) will be determined for the most part by the course requirements for graduation. Hence, the terminal performance objectives (TPO) will initially be based upon the various disciplines found in the present curriculum. By indicating in advance why a given subject matter is thought to be important, we can assess the long term contribution of this subject matter to the learners knowledge.

The chart on the following page illustrates how the systems objectives will be developed.


SYSTEMS OBJECTIVES
English
Mathematics
Science
Social Studies
Occupation
TPO
IPO

The task of developing the systems objectives would be initiated by a team of teachers representing each discipline. These procedures listed below will be followed:

1. Analyze present course offerings in terms of appropriateness and currency of content.

2. Analyze student potential aspirations as related to subject area and student characteristics, including their self-image as to their roles in society and the economic structure.

3. Identify and construct the overall objectives for each discipline.

4. Identify and construct the interim objectives (IPO) for each course.

5. Analyze the TPO's between and among course for lateral and vertical articulation.

The performance objectives will be sequences and structured into an heir archy based on prerequisite knowledge and skills; this will provide a basis for the development of pre-tests, performance measures, and for defining instructional strategies. Those TPO's will be reviewed by the curriculum department of the District and by special consultants at the discretion of the District.

TEACHING-LEARNING ACTIVITIES

These activities can be thought of as being divided into two parts: (1) teaching strategies and, (2) student learning activities.

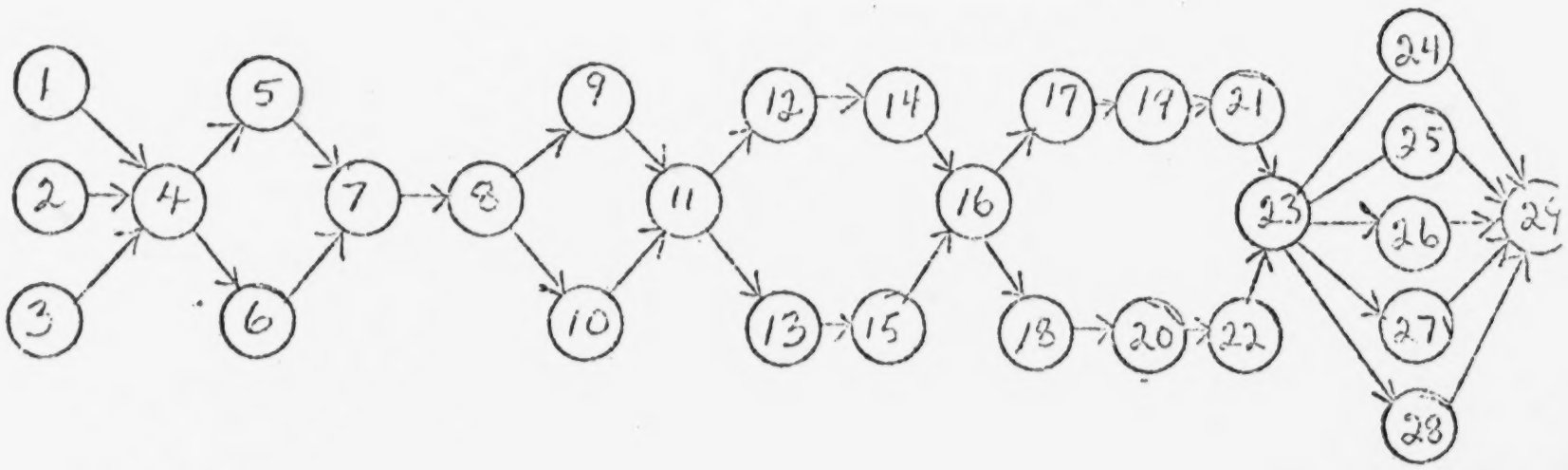
Teaching strategies would include the use of large groups, medium groups, and small group instruction. Learning activities would include the use of various media. Pre-packaged modular instructional units would be used to facilitate the teaching-learning process.

A primary objective of the organic curriculum is to individualize the instructional program. The modular instructional packages would fit this objective.

A Model Flow Diagram

The flow diagram shown on the next page illustrates the step-by-step process in constructing modular instructional units.

Network for Developing the Instructional Unit



1. Unit defined.
2. Title assigned.
3. Broad objectives relating unit to total course identified.
4. Content determined.
5. Major concepts identified.
6. Minor concepts identified.
7. Specific behavioral objectives identified.
8. Type of package for instructional unit determined.
9. Self contained kit of related materials and teacher helps identified.
10. Self directed study guide with references to multiple sources for resources with appropriate teacher helps identified.
11. Teaching-learning approach identified.
12. Inductive, unfolding, presentation approach determined.
13. Deductive rediscovery, problem solving approach determined.
14. Identified concepts, basic understandings, skills, etc. are placed in the teacher's and student's package.
15. Identified concepts are placed in the teacher's package but not in the student's package.
16. Identified behavioral objectives, skills, basic understandings, etc. are placed in the instructional packages.
17. Teaching activities identified and placed in the teacher's package.
18. Learning activities identified and placed in the student's package.
19. Teaching resources identified and placed in the student's package.
20. Learning resources identified and placed in the student's package.
21. Performance measure for evaluation of the student by the teacher are identified and placed in the teacher's package.
22. Performance measure for student self evaluation are identified and placed in the student's package.
23. Provisions for individual difference are identified.
24. Two or more track or unrelated approaches to the same concept established and written into the instructional package if desired.

25. Two or more levels or phases of difficulty leading to the same concept are established and written into the instructional package if desired.
26. Quest program in which a student searches in depth about a concept is written in the instructional package if desired.
27. Individualized analysis and prescription for each student is developed and written into the instructional package if desired.
28. Other ways of individualizing instruction are developed and written into the instructional package.
29. The unit is completed.

Evaluation

It should again be emphasized that this model specifies minimum attainments for every student and that educational attainment in the higher order of cognitive, psychomotor, and affective domains would be provided thru quest activities.

Evaluation can be carried out on two levels:

1. The degree to which the system meets the needs of students, and

2. The ease with which the student is able to move thru the curriculum.

On the first level, the system will be subject to constant and continuous evaluation. It will have built-in quality control check points, where accomplishments are evaluated in light of the projected missions, and adjustments are made as deemed necessary.

On the second level, the learner is evaluated on the basis of attainment of minimum performance skills. Quality control check points are used to gage the rate of progress through the curriculum and, thereby, guard against too early graduation or progress that is too slow.

APPENDIX C

PERT CHART SCHEDULE

The PERT Chart is tentative, pending approval by the Board of Education of the Houston Independent School District, hereinafter called the Board of Education. It is felt that this approval is forthcoming. The basic plan that spawns the PERT Chart is as follows:

I. Booker T. Washington High School has been designed by the Board of Education as the Center for the Development of an Organic Curriculum in the Houston Independent School District.

II. Instructional materials and personnel additions to the existing staff at Booker T. Washington have been possible through a Title I Grant from ESEA. Focus on Achievement is the title of the funded project. The additional personnel, in the form of Assistant Principals, Counselors, Discipline Specialists and Teacher-Aides, has made it possible to provide free time for selected staff members to write and tryout behavioral objectives in the classroom.

In September 1968, Booker T. Washington was included in a Title III Grant from the U.S. Office of Education. The title of this project is Central Cities. Supplies and equipment, and teacher-aides were acquired through Central Cities to continue to implement the organic curriculum.

Booker T. Washington is located in a city that is planning a Model Cities program. Continued implementation and further development of the organic curriculum is, to a great degree, dependent on additional Federal and/or State funds.

MAJOR ACTIVITIES

Staff Development

Designate District Coordinator and School for ES'70 Participation	(1- 2)
Provide Management and Coordination of ES'70 Program	(3- 4)
Determine Role Differentiation	(5- 6)
Conduct In-Service Training Program	(6- 7)
Evaluate Staff Development Program	(7- 8)

Instructional Management and Career Guidance

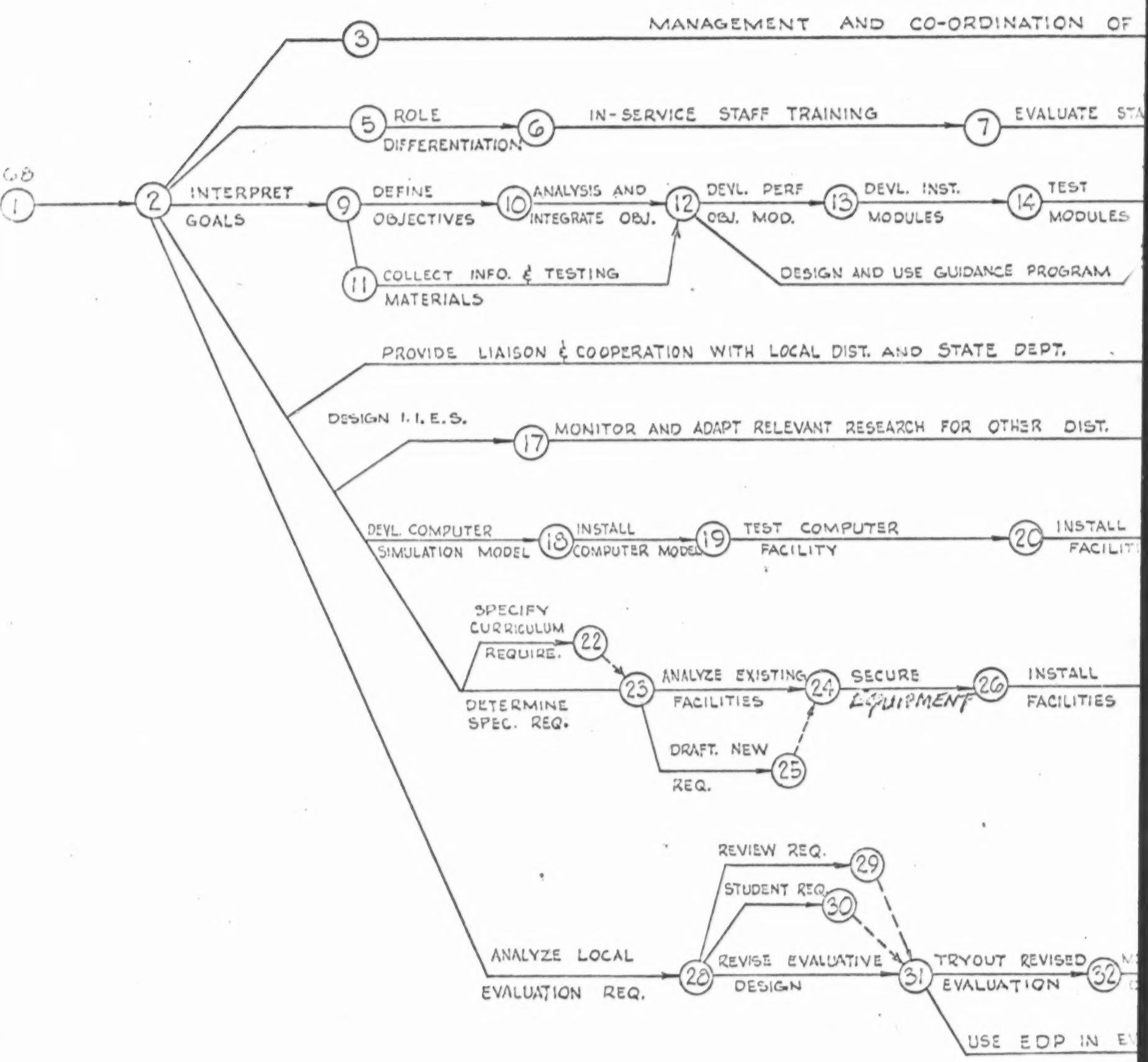
Interpret ES'70 Goals to Staff	(2- 9)
Define Educational Objectives	(9-10)
Classification and Integration of Educational Objectives	(10-12)
Collect Information and Testing Materials of Developing Instructional Model	(11-12)
Develop Performance Objectives Modules	(12-13)
Develop Instructional Modules	(13-14)
Test Instructional Modules	(14-15)
Design and Use of Organic Curriculum Guidance Program	(12-15)
Integrate Instructional Modules Into Total Curriculum	(15-16)

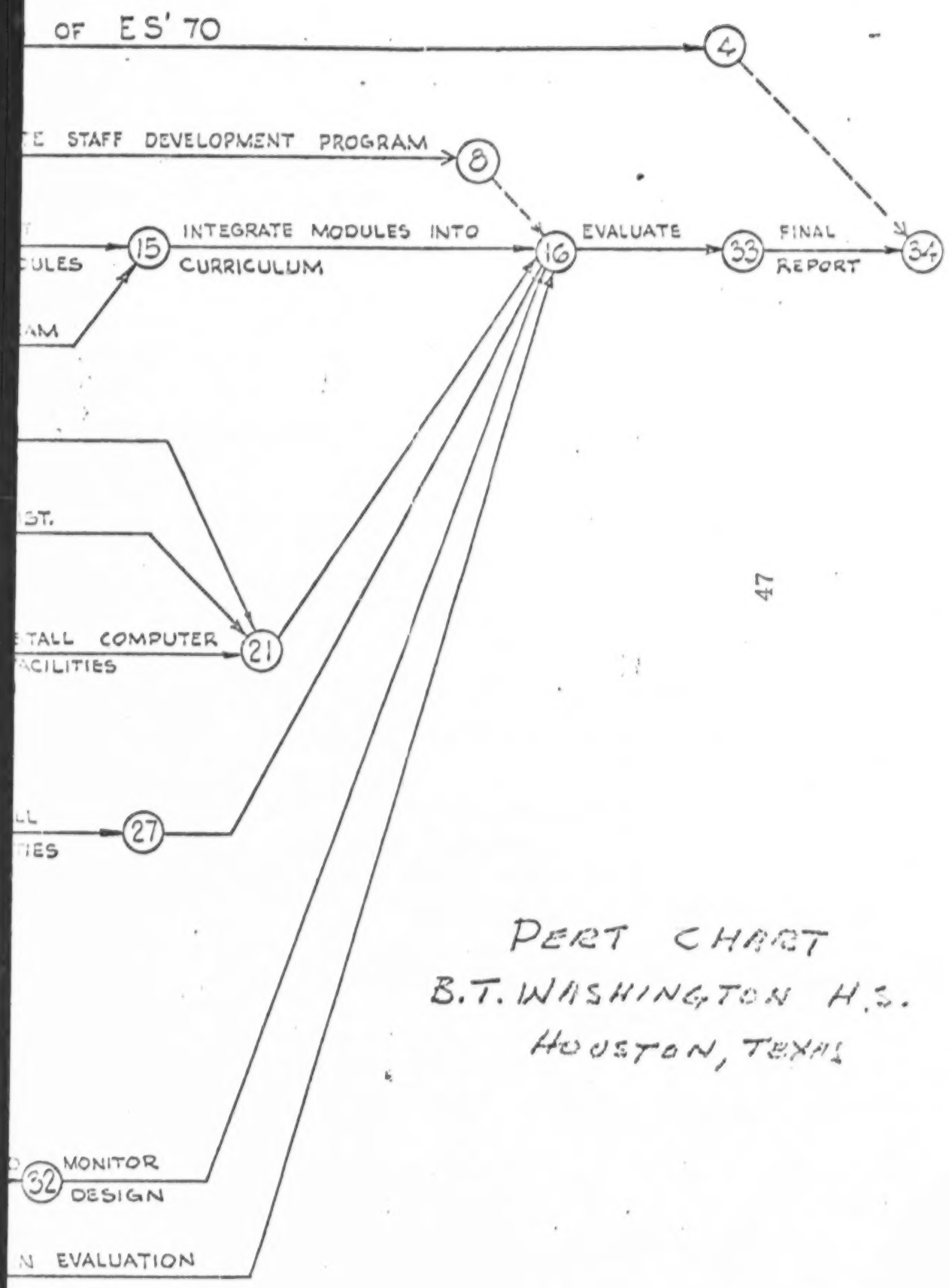
School Management

Design Interim Central Information Exchange System	(2-17)
Monitor, Evaluate, and Adopt Relevant Organic Curriculum Research Information	(17-21)
Develop Computer Simulator Model	(2-18)
Install Computer Model	(18-20)
Test Computer Facilities	(19-20)
Install Computer Facilities	(20-21)
Specify Curriculum Requirements	(2-22)
Determine Space and Facilities Requirements	(2-23)
Analyze Existing Facilities	(23-24)
Draft New Requirements for Facilities and Equipment	(23-25)
Secure Needed Equipment	(24-26)
Install Facilities in School	(26-27)

Evaluation

Monitor and Modify as Indicated	(27-16)
Analyze Evaluation Requirements	(2-28)
Review Criteria for Local Accreditation	(28-29)
Review Student Certification Criteria	(28-30)
Develop ES'70 Evaluation Design	(28-31)
Tryout Revised Evaluation Design in School	(31-32)
Monitor, Collect Evaluation Data and Modify as Indicated	(32-16)
Use EDP in Evaluation	(31-16)
Evaluate Total System	(16-33)
Produce Final Report	(33-34)


GB
1
2
INTERPRET GOALS
3
MANAGEMENT AND CO-ORDINATION OF
5
ROLE DIFFERENTIATION
6
IN-SERVICE STAFF TRAINING
7
EVALUATE STA
9
DEFINE OBJECTIVES
10
ANALYSIS AND INTEGRATE OBJ.
12
DEVL. PERF OBJ. MOD.
13
DEVL. INST. MODULES
14
TEST MODULES
11
COLLECT INFO. & TESTING MATERIALS
DESIGN AND USE GUIDANCE PROGRAM
PROVIDE LIAISON & COOPERATION WITH LOCAL DIST. AND STATE DEPT.
DESIGN I. I. E. S.
17
MONITOR AND ADAPT RELEVANT RESEARCH FOR OTHER DIST.
DEVL. COMPUTER SIMULATION MODEL
18
INSTALL COMPUTER MODEL
19
TEST COMPUTER FACILITY
20
INSTALL FACILITI
SPECIFY CURRICULUM REQUIRE.
22
DETERMINE SPEC. REQ.
23
ANALYZE EXISTING FACILITIES
24
SECURE EQUIPMENT
26
INSTALL FACILITIES
DRAFT. NEW REQ.
25
REVIEW REQ.
29
STUDENT REQ.
30
ANALYZE LOCAL EVALUATION REQ.
28
REVISE EVALUATIVE DESIGN
31
TRYOUT REVISED EVALUATION
32
USE EDP IN E



PERT CHART
B.T. WASHINGTON H.S.
HOUSTON, TEXAS

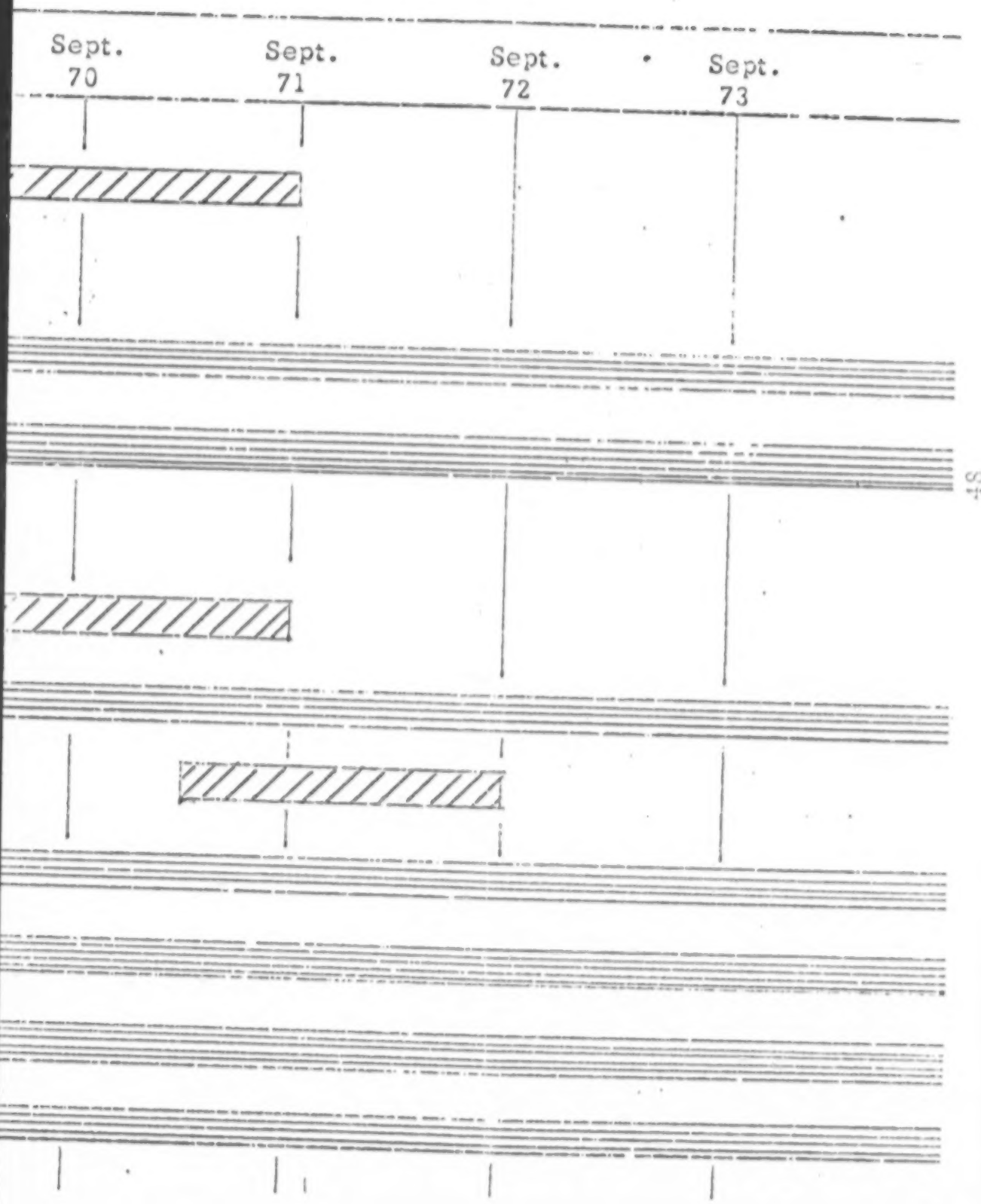
SUGGESTED GANTT CHART FOR BOOKER T. WASHINGTON HI

OPERATING ACTIVITIES

MAJOR ACTIVITIES	March 68	Sept. 68	Sept. 69	Sept. 70	Sep 71
Instructional Management					
Central Cities Project					
Designate Coordinator and Project School					
Staff Development					
Focus on Achievement Project					
Interpert ES'70Goals to Staff					
Collect and Develop Instructional Materials					
Design and Use Guidance Program					
Tryput Total Curriculum					
School Management					
Provide Continuing Liaison with District and State Department					
Develop and Use Computer for Systems Analysis					
Evaluation					
Develop and Use Evaluation Instruments and Procedures					

T. WASHINGTON HIGH SCHOOL

IVITIES



APPENDIX D

DULUTH WORKSHOP PARTICIPANTS

Mr. Roland Smith	Social Studies
Miss Faye B. Bryant	Guidance
Mrs. Naurita Gray	Mathematics
Mrs. Paralee Burney	English

SAN MATEO READING WORKSHOP PARTICIPANTS

Mrs. Rosalie Davis
Mrs. Teddy McDavid

WILLINGBORO WORKSHOP PARTICIPANTS

Mrs. Hugh Dell Gatewood	Vocational
Mrs. Roberta Deason	English

DULUTH ES '70 PRINCIPALS' WORKSHOP PARTICIPANT

Arthur L. Pace	ES '70 Coordinator

ATLANTA CONFERENCE PARTICIPANTS
Atlanta, Georgia

Mr. Roland Smith	Social Studies
Mr. Ruben Monduth	Student

TRI-UNIVERSITY PROJECT PARTICIPANTS
Purdue University, Lafayette, Indiana

Mrs. Roberta Deason	English Specialist
Mrs. Betty Johnson	Supervisor of English

HARVARD UNIVERSITY GUIDANCE WORKSHOP
Cambridge, Massachusetts

Mr. F. D. Wesley	ES'70 Principal
Mrs. Aster L. Mock	Ass't. Principal
Mrs. Janet Jackson	Counselor

FLEXIBLE SCHEDULING WORKSHOP
Iowa Educational Information Center
University of Iowa, Iowa City, Iowa

Mr. Arthur L. Pace	ES'70 Coordinator
Mr. F. D. Wesley	ES'70 Principal

APPENDIX E

LEARNING "PACKETS" DEVELOPED AS AN OUTGROWTH OF WORKSHOP AND IN-SERVICE TRAINING AT B. T. WASHINGTON

1. "Terminal Performance Objectives in RWS", Davis, Rosalie; Deason, Roberta; Robinson, Patricia; Jones, Celia; Stork, Margaret

2. "Solving Quadratic Equations", Gray, Naurita

3. Working With Polynomials - Addition and Subtraction, Algebra I, Gray, Naurita

4. "You Have the Right to Read", McDavid, Teddy

5. "Polynomials and Factoring, The Law of Exponents", Gray, Naurita

6. "Junior Math Lab", Gray, Naurita

7. "Solving Quadratic Equations", Algebra II, Gray, Naurita

8. "Conflict: Its Origin and Expression Through Communication", Burney, Paralee

9. "Introduction to Flow Charting", Gray, Naurita

10. "Introduction to the Calculator", Gray, Naurita

NOTE: A number of "Packets" are being developed but were not completed at this writing.

APPENDIX F

MATERIALS UTILIZED IN INSERVICE WORKSHOP AT B. T. WASHINGTON (ES'70 Project School for Houston)

1. A series of tested Instructional Programs Specially Designed for Pre and Inservice Teacher Education by Popham, W. James and Baker, Eva L.

   a. "Educational Objectives"
   b. "Systematic Instructional Decision Making"
   c. "Selecting Appropriate Educational Objectives"
   d. "Establishing Performance Standards"
   e. "Appropriate Practice"
   f. "Perceived Purpose"
   g. "Evaluation"

   (This program included: an illustrated filmstrip, an accompanying audio-taped narration and an instructors manual.)

2. Principles of Instructional Technology - Deterline, William

   (programmed instructional materials--30 hours of classroom audio-tape/filmstrip presentations plus 20 additional hours of individual programmed exercises in instructional design.)

3. Info-Pak Series on Innovation - Allen, Dwight W.
   (Audio-tape Cassettes)

   a. "Grading"
   b. "Micro-teaching"
   c. "Flexible Scheduling"

APPENDIX G

BEHAVIORAL OBJECTIVES IN THE TEACHING OF ENGLISH

A TRI-UNIVERSITY PROJECT

The United States Office of Education selected and funded three Universitites to write a catalogue of Behavioral Objectives in the Teaching of English, Grades 9 - 12. The consortium was composed of the University of Illinois, University of Indiana, and Purdue University. Seven directors from the three universities have the direct responsibility of putting together this catalogue. As a matter of procedure, they brought together some 20 consultants from over the country to assist in compiling these objectives and determining problems related to implementation. The catalogue has now been written and Houston has been chosen as one of eight districts over the United States for testing and validation. It is of particular significance that four of the eight districts selected were ES '70 Schools. (Portland, Oregon, Quincy, Massachusetts, and Nova Schools at Fort Lauderdale, Florida were the other three ES '70 Schools).

As a matter of further logistics, each District is to select two schools; one is to serve as a primary school and the other a matching school. B. T. Washington is our designated primary school where some two or three classes at either the 9th., 10th., or 11th. grade will be involved in the study. It should be noted that this is in no way an attempt to develop a national curriculum. Each school will select only those behavioral objectives from the catalogue which are in keeping with goals of instruction in that particular school district. Instruction will be adjusted to meet the objectives sought. M. C. Williams is the matching school for comparison purposes. Both schools will do pre-testing and post-testing in search of measurable outcomes. Of tremendous benefit to the district will be the training given teacher representatives from both schools as they attend special workshops from time to time at no expense to the district. Also available will be free consultant service from Purdue University as they work with our staff in project implementation. Dr. Thomas Pietras is the project officer at Purdue who extended the formal invitation.

AMG/8/12/70

APPENDIX H

FLEXIBLE SCHEDULING PROJECT

The following phases of the Flexible Scheduling Project have been completed:

1. Orientation of Staff, Students and Parents.

2. Pre-planning...

   a. acceptance of the idea as a new approach to utilization of time for instructional activities by staff, students and parents.
   b. organization of committees.

3. Inservice of Staff

   a. Basic Philosophy and Rationale
   b. Specific Design Designation

      (1) course offerings (reevaluation and description of course offerings)
      (2) course prerequisites
      (3) technique seminars (large group, small group, laboratory and independent study)
      (4) performance criteria for course offerings
      (5) unstructured time and student responsibility
      (6) guidance instructional program
      (7) Resource Center Considerations

4. Board of Education Approval

   a. approval of Central Administration
   b. budget approval by Central Cities Title III Administrator
   c. negotiations with contractor (Iowa Educational Information Center, University of Iowa)

5. Preparation and Submission of Data to IEIC

   a. inca program (input)
   b. school schedule program (output)
   c. room assignment program (output)
   d. student assignment program (output)
   e. student and teacher schedule

6. Public Relations

   a. assemblies
   b. bulletin boards
   c. parental letters
   d. newspapers (Houston Post and Houston Chronicle)

7. Building Modifications

   a. identification of rooms suitable for large group, small group, laboratory, independent study, resource centers.
   b. request and secure partitions for modification of existing room space.

APPENDIX I

FIELD TEST OF A COMPREHENSIVE GUIDANCE SYSTEM

Perhaps a short history of participation in the Comprehensive Guidance Project will assist in providing the explanation needed in this regard. (See Item 22 "Summary of Work Completed Under This Grant")

MEMORANDUM
June 10, 1970

TO: Mr. Arthur M. Gaines, Jr.
Assistant Superintendent, Secondary Schools

FROM: Arthur L. Pace, Acting Assistant Director
Title I, Model Cities, Secondary

RE: Field Test of Elements of a Comprehensive Guidance System

The following is an excerpt from the main proposal that has been submitted to the Bureau of Research, U. S. Office of Education. It will contain the pertinent facts that you requested to facilitate your recommendation to higher administration for approval. Copies of the main proposal will be made available at your request.

Purpose of Field Test: Using current developments from guidance and computer technology, counseling theory and research, and psychological measurement, to provide a tested demonstration guidance program for accomplishment of the following activities:

1. Assess guidance related needs of students in schools that are attempting to individualize education under the auspices of ES'70

2. Adapt existing elements of a comprehensive career guidance program to needs of students

3. Develop additional instructional materials, as well as individual and group guidance and counseling procedures to complete a guidance program for the field test

4. Train counseling personnel (e.g., counselors and teachers) to help students and parents make use of the guidance and counseling elements developed within this program

5. Implement this guidance program in the two demonstration schools (Booker T. Washington of Houston and John Muir and Pioneer Schools of San Jose, California

6. Evaluate the effect of this implementation by conducting within-school and between-school (i.e., the demonstration versus the central school in each district) comparisons of student outcomes

The following will be presented in abbreviated form in an effort to quickly answer anticipated questions:

What schools are involved?

1. Booker T. Washington and a control school in the Houston District

2. Two schools, John Muir and Pioneer Schools of San Jose, California

Why was Houston selected and, more particularly, Booker T. Washington?

The Houston Independent School District is endeavoring to achieve quality education for all of its students, and is actively engaged in Research and Development. Booker T. Washington has been designated as an R. and D. Center for the Houston District. Booker T. Washington is participating in a nationwide research program. This program has as its main purpose individualizing instruction in secondary schools (organic curriculum). This is the ES'70 Network of schools.

What is unique about this new comprehensive guidance program?

This program is designed for schools that are attempting to individualize instruction. Guidance related activities will be integrated closely with the basic instructional system at all academic levels (7-12). It will not be an added service to meet only the needs of exceptional students on both extremes of the behavior spectrum as is the usual case in traditional guidance programs. The comprehensive guidance program is designed to attempt to serve all of the needs of all students at each academic level and to concern itself with student outcomes outside of, as well as within, the instructional setting.

What will the program cost the Houston Independent School District?

Because this guidance program is sponsored by the Bureau of Research of the U. S. Office of Education, all costs of the field test will be paid from the USOE Grant, if it is awarded.

What role will the higher administration of the Houston Independent School District play?

In keeping with school board policy, the Superintendent or his assignee will advise and steer the Houston field test. The channels of authority will follow the usual procedures.

What benefits will Houston school children receive?

This program is designed to give closer attention to all the guidance needs of all children who participate. Needs in this instance must be distinguished from the usual psychological connotation. "Needs," as it is used in this instance, is the discrepancy between the child's present status and the level of performance required by one of his immediate or long range goals, or one of the instructional objectives upon which he is now working.

What will this mean to the entire Educational Research effort of the Houston Independent School District?

The prestige and honor and publicity that can be received from participation in this effort can be used as support for all future proposals submitted to governmental agencies.

Such participation will certainly enhance the image of the R. and D. effort in Houston.

Who initiated the proposal for the funding of the project?

Dr. G. Brian Jones of Palo Alto, California. Dr. Jones is a graduate of Stanford University. He will be project director and will be responsible for the field test.

Who will monitor the project in Houston?

A steering committee of the Principal of Booker T. Washington, Mr. F. D. Wesley, Arthur L. Pace, Acting Assistant Director, Title I, Model Cities, under the direction of Mr. Arthur Gaines, Assistant Superintendent, Dr. Richard D. Slater, Associate Superintendent, and any other persons the Superintendent so designates. It is hoped that Mrs. Mauryne Dailey, Guidance Director, and Miss Bea Smith, Director, Title I and Model Cities, will serve on an advisory committee for the field test.

Will it be necessary to hire new personnel?

Only one field test counselor and a field test coordinator.

What salaries will be paid by this project?

The two demonstration schools, San Jose, California, and Houston, Texas, will be allowed one field test coordinator who will devote half-time 12 months at $12,000 per year ($6,000), and one field test counselor full-time for 12 months at $11,000 per year.

When will this program become operational?

Assuming Houston School Board approval, planning will begin in July, 1970. This will be the first part of Phase I. During this time plans for training counseling personnel will be made. In September of 1970, students will begin to participate; Phase I will end July 31, 1971. Phase II will begin in August, 1971, and end in July, 1972. Phase III will begin in August, 1972, and end July, 1973. Phase IV will begin in August, 1973, and end in July, 1974.

Who is responsible for the special training needed for this field test?

Training will be effected through the efforts of Dr. Brian Jones and a selected staff of trainees. No release time is needed. Summer workshops will suffice, it is anticipated. Participants will be compensated for time spent in these workshops.

The field test will be conducted as a three-way partnership between the American Institute of Research, the Houston Independent School District, and the San Jose Unified School District. Booker T. Washington High School will participate in accordance with School Board policy, and according to the dictates of the Superintendent of the Houston Schools and/or his designee.

Arthur L. Pace

ALPan
Attachment

APPROVED:

Arthur M. Gaines, Jr.
Assistant Superintendent

cc Dr. Woodrow Watts
Dr. Richard D. Slater
Mr. Arthur M. Gaines
Miss Bea Smith
Mr. F. D. Wesley
Mr. Frank R. Cobb
Mr. Lawrence H. Cook

VI. SCHEDULE OF EVENTS

Total Duration of Project: 1 July 1970--30 June 1973

Phase I (12 Months) 1 July 1970--30 June 1971	Phase II (12 Months) 1 July 1971--30 June 1972	Phase III (12 months) 1 July 1972--30 June 1973
1 July 1970--31 October 1970 . Identification of one demonstration and one control school in each of the two participating school districts. . Study of guidance needs of students in schools identified. Needs in areas relevant to juvenile delinquency especially will be identified. . Planning and preparation of all elements to be field tested in both school districts. . Selection and training of school personnel to be involved in field test in both school districts. . Tentative planning of program to be implemented in Phase II.	1 July 1971--30 September 1971 . Final training of school personnel to be involved in field test in both school districts in Phase II. . Final preparation of all elements to be field tested in both school districts in Phase II. . Tentative planning of program to be implemented in Phase III.	1 July 1972--30 September 1972 . Final training of school personnel to be involved in field test in both school districts in Phase III. . Final preparation of all elements to be field tested in both school districts in Phase III.
1 November 1970--31 May 1971 . Pre-treatment assessment of student characteristics in grades 9 and 10 of demonstration and control schools in both participating districts. . Implementation of field test in grades 9 and 10 of demonstration schools in both participating districts. . Post-treatment assessment of student characteristics in grades 9 and 10 of demonstration and control schools in both participating districts. . Data analysis and preliminary writing of report for Phase I. . Selection and training of school personnel to be involved in field test in both school districts in Phase II. . Further preparation of elements to be field tested in Phase II in demonstration schools of both school districts.	1 October 1971--31 May 1972 . Pre-treatment assessment of student characteristics in grades 9, 10, and 11 of demonstration and control schools in both participating districts. . Implementation of field test in grades 9, 10, and 11 in both participating districts' demonstration schools. . Post-treatment assessment of student characteristics in grades 8, 9, 10, and 11 in both participating districts' demonstration and control schools. . Data analysis and preliminary writing of report for Phase II. . Selection and training of school personnel to be involved in field test in both school districts in Phase III. . Further prepraration of elements to be field tested in Phase III in demonstration schools in both school districts.	1 October 1972--31 May 1973 . Pre-treatment assessment of student characteristics in grades 7, 8, 9, 10, 11, and 12 of demonstration and control schools in both participating districts. . Implementation of field test in grades 7, 8, 9, 10, 11, and 12 in both participating districts' demonstration schools. . Post-treatment assessment of student characteristics in grades 7, 8, 9, 10, 11, and 12 in both participating districts' demonstration and control schools. . Data analysis and preliminary writing of report for complete field test. . Evaluation by local school personnel of the elements of the youth development guidance program field tested in this study. Recommendations for future use of the system, the demonstration schools, and all personnel who received training in the participating districts.
1 June 1971--30 June 1971 . Analysis of results and preparation and submission of report for Phase I.	1 June 1972--30 June 1972 . Analysis of results and preparation and submission of report for Phase II.	1 June 1973--30 June 1973 . Analysis of results and preparation and submission of final report of complete project.

APPENDIX J

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
OFFICE OF EDUCATION
BUREAU OF RESEARCH
WASHINGTON, D. C. 20202

OE USE ONLY
0

ABSTRACT OF PROPOSED RESEARCH ACTIVITY

TITLE OF PROPOSAL: Utilization of Modern Management Techniques in School Administration

PROJECT DIRECTORS NAME: Pace, Arthur L.

INSTITUTION NAME: Houston Independent School District

ABSTRACT (THIS IS FOR INTER-GOVERNMENTAL DISTRIBUTION, OMIT CONFIDENTIAL INFO. - 2000 CHARACTERS AND SPACES MAXIMUM)

In general, management activity may be classified in two areas. Management control consists of day-to-day decisions related to immediate problems. Management planning, on the other hand, is more directly concerned with long-range decisions, especially those which have a lasting effect.

It is proposed that the Houston Independent School District initiate a program for analysis and pilot operation in the area of administrative planning. It is further proposed that the procedures developed within that framework be implemented in an individualized in-service program for school administrators within the District. This project would utilize computer services to implement two major objectives: (1) Simulation for administrative planning decisions, (2) Computer-assisted management training.

The computer can be utilized as a tool for accomplishing these objectives through a combination of deterministic and probabilistic models by which one can simulate various administrative problems. The mode of operation will be direct and conversational, providing the administrator immediate access to the capability of the computer. The School District has developed a cadre of specialists within the Title III Science Resources Center operation who can be relied upon to assist in the development of software related to this operation. The School District is also engaged in the development of an intensive system-wide in-service program for school administrators with emphasis upon such modern management techniques.

It is anticipated that the initial operation of this program would be concerned with an analysis and development of specifications for achieving the two principal objectives. The second stage will consist of the implementation on a pilot operational basis of both simulation for administrative planning decisions and computer-assisted management training. All three stages of development will involve input from the other seventeen ES'70 districts. The model thus developed will be representative of administrative management problems from a broad spectrum of educational settings.

APPENDIX K

ES '70 NETWORK SCHOOLS

Atlanta, Georgia

Baltimore, Maryland

Bloomfield Hills, Michigan

Boulder, Colorado

Breathitt County, Kentucky

Broward County (Nova), Florida

Chicago (Archdiocese School Board), Illinois

Duluth, Minnesota

Houston, Texas

Mamaroneck, New York

Mineola, New York

Monroe, Michigan

Philadelphia, Pennsylvania

Portland. Oregon

Quincy, Massachusetts

San Antonio, Texas

San Mateo, California

Willingboro, New Jersey

CERTIFICATION

Signature of Contract Officer George G. Garver

Dr. George G. Garver
General Superintendent
Houston Independent School District

Signature of Principal Investigator Arthur L. Pace

Arthur L. Pace

October 11, 1970
Date